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Texas Agricultural Extension Service

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PEACH TREE PRUNING



Peaches are pruned in several ways in the U.S. depending on the area, rainfall, grower preference, and tradition. However, the open-center training method is the most widely used. Peaches do not naturally grow into this desired shape, therefore, pruning and training are essential.

Pruning is an ongoing process. As pruning reduces the size of the tree, it also reduces the amount of fruit. Available nutrients such as nitrogen for buds increase the growth rate. The more severe the pruning, the more the number of buds. The more pruning results in a smaller tree.

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PEACH TREE PRUNING

Calvin G. Lyons*

Peaches are pruned in several ways in the U.S. depending on the area, rainfall, grower preference and tradition. However, the open center training method is the most widely used. Peaches do not naturally grow into this desired shape; therefore, pruning and training are required.

Regardless of the system used, the following points are important to successful pruning and training of peach trees.

- Knowing how a peach tree grows and its fruiting habits.
- Understanding the basics of pruning and how trees respond to specific cuts.
- Developing clear objectives of what you want to accomplish and selecting proper pruning and/or training techniques.
- Either using or communicating these objectives and necessary pruning skills to the persons who will do the pruning.

Peach Fruiting Habit

Peaches fruit on year-old wood from flower buds formed during the previous growing season. Flower buds start forming in late June to July and represent next year's crop. Shoot growth or regrowth forming after this period develops a low percentage of flower buds. The majority of fruit are borne on laterals formed on long shoots. The ideal length for fruiting shoots is 8 to 24 inches; however, this varies for variety and area.

Light is critical for development of fruit wood and flower buds. Under shaded conditions even for a single season, fruit wood becomes weak and dies back.

Unpruned trees fruit most quickly. However, fruiting wood moves up and out from the tree's center because of shading. Annual pruning is necessary to maintain tree size, fruit production within a desired space and productive fruiting wood throughout the tree.

Basic Effects of Pruning

Pruning removes terminal bud and apical dominance, resulting in growth of lateral buds. Thus,

pruning is an invigorating process. As pruning reduces tree size, the root system services a smaller tree. Availability of nutrients such as nitrogen for buds increases and regrowth results. The *more severe the pruning* (greater size or number of cuts), *the greater the regrowth*. Even though pruning results in vigorous vegetative growth, tree size is normally reduced.

Pruning stimulates regrowth close to the pruning cut. Regrowth is closest to the cut on vertical limbs. Regrowth on limbs at 45° to 60° angles develops farther away from the cut.

Pruning stimulates shoot growth at the expense of flower bud formation. Pruning young trees delays fruit production as well as yields in early years. Reduction of early yields varies with pruning severity.

Types of Cuts

Heading removes the terminal portion of shoots, stimulates regrowth near the cut and is the most invigorating type of cut. It induces branching at specific points such as establishing scaffolds in young trees. However, heading has the greatest effect on reducing fruit production; use it with care in young trees and bearing trees.

Thinning removes an entire shoot or limb to its point of origin from a main branch or limb. Some terminal shoots are left, so apical dominance remains. As a result, growth develops near undisturbed shoots while lateral shoot development is suppressed. Thinning is generally the least invigorating type of pruning cut with the least effect on reducing fruit production. Thinning cuts are useful to shorten limbs, improve light penetration and direct growth of limbs (figure 1).

One misused type of thinning cut is the bench cut where an upright limb is pruned to a horizontal or flat limb. Watersprouts result at the "bench" area, especially following large cuts, in absence of apical dominance in the flat limb. Bench areas are weak and subject to sunscald and winter injury. The correct method is to maintain some apical dominance by thinning to limbs similar in angle to pruned limbs. Make pruning cuts when limbs are small to reduce regrowth. Train scaffolds to a 45° angle in the early years to minimize the need for severe bench cuts later (figure 2).

* Extension horticulturist, The Texas A&M University System.

Pruning Newly Set Trees

Prune newly planted trees immediately after planting. Use a heading cut 24 to 30 inches above ground. Scaffolds usually develop within 12 inches of the cut. Adjust height of heading cut based on where scaffold limb is to develop. Height of lowest limb is determined by space needed to move equipment under the tree.

The top two or three shoots that develop below the cut are the most dominant and upright in angle, and they develop narrow crotches. Early to mid-season (mid-May to June), prune the top two or three shoots in half to form a small "bush" in the center of the tree. By "topping the center," energy is diverted to more desirable scaffolds. The "bush" also forces remaining scaffolds to grow out and up, maintaining good crotch angles. Tip back the small bush in the center if it gets too vigorous. Remove it at the end of the first season (figure 3).

First year — dormant pruning. Cut out the small bush (topped center) to leave the desired open center. Select three to four well positioned scaffolds

with strong crotch angles. Use thinning cuts to split the scaffolds into secondary limbs 2 or 3 feet from the trunk. Maintain a 45° angle for the scaffold, minimizing use of bench cuts and avoiding them whenever possible (figure 4).

Second year. Pruning during the second year is a continuation of the training begun the first year. Limit summer pruning to removing watersprouts and cutting vigorous upright laterals to outgrowing limbs. Dormant pruning selects the secondary scaffolds and if growth has been adequate, topping at the desired height may be required (figure 5).

Mature trees. Once trees have attained their height and spread, maintain healthy fruiting wood along the scaffold. Completely remove excessively vigorous shoots. Prune fruiting wood back toward the scaffold limb with thinning cuts to encourage annual shoot growth close to the scaffolds. This reduces the tendency for fruiting wood to move out from the center of the tree. Once it is lost from old sections of scaffolds, fruiting wood is difficult to regain (figure 6 and 7).

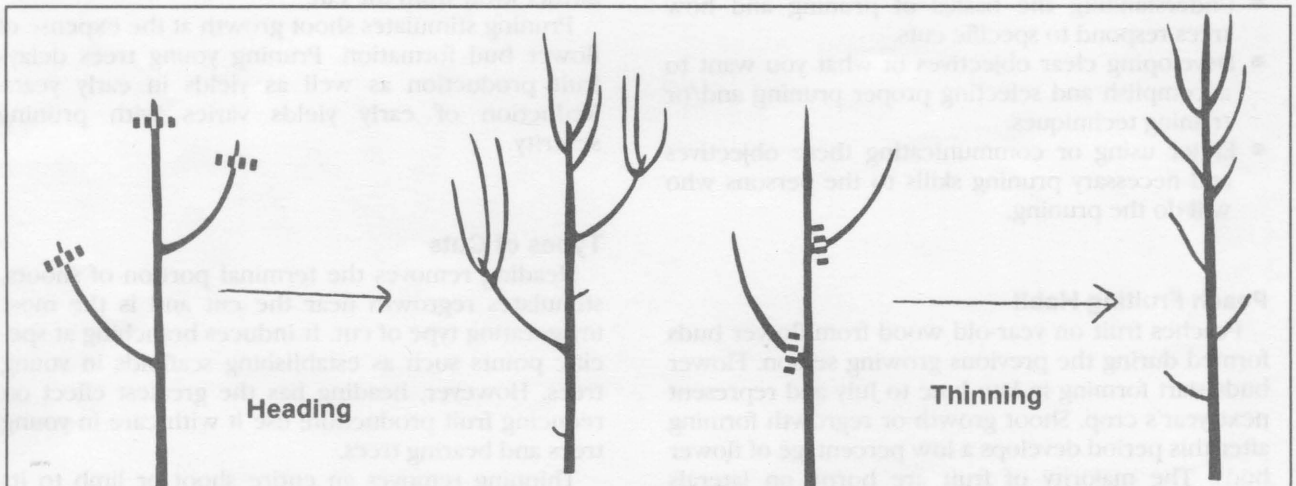


Figure 1. Heading (left) removes a portion of the shoot or limb, stimulating branching below the cut. Heading is most useful for stimulating branching at specific locations when training young trees. Thinning (right) removes an entire shoot or limb to its point of origin or to a side limb. Thinning is the least invigorating type of cut with the least effect on reducing fruit production. Thinning cuts are most useful for promoting fruit production and for maintenance pruning.

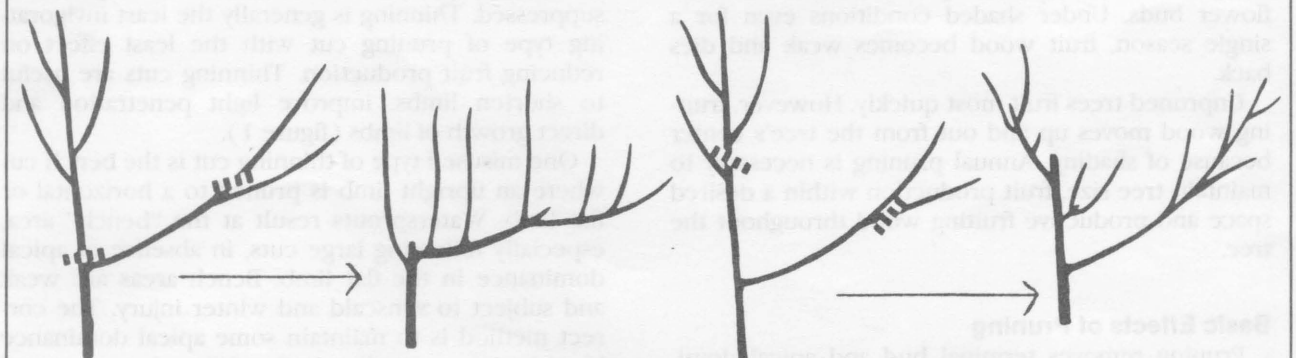


Figure 2. Bench cut (left) is formed by pruning a vigorous, upright limb to a more horizontal limb. Because of the loss of apical dominance in the horizontal limb, vigorous watersprouts develop at the "bench." Correct method is to thin the limbs that are more similar in angle (right) to maintain some apical dominance. Train to a 45° angle in early years to minimize need for severe bench cuts.

Topped center

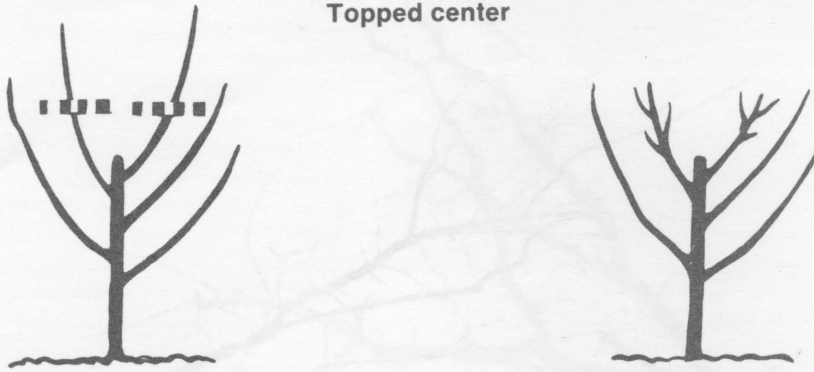


Figure 3. Methods of training first-summer trees. Topped center involves cutting the top two to three shoots in half early to mid-season to form a "bush" in the tree center. This method directs growth into more desirable scaffolds.



Figure 4. One-year-old tree before (left) and after (right) first-year dormant pruning. Select three to four well-spaced primary scaffolds, ideally spaced several inches apart vertically. Prune primary scaffolds to laterals (which form secondaries) at 2 to 3 feet from the crotch. Thin out vigorous upright shoots in center but leave some weaker laterals.



Figure 5. Two-year-old tree before (left) and after (right) the second-year dormant pruning. Select secondary scaffolds at 2 to 3 feet from the crotch. Thin out low and horizontal shoots and excessively vigorous shoots growing toward the center. Maintain scaffolds at a 45° angle, minimizing use of severe bench cuts.



Figure 6. Four-year-old tree before (left) and after (right) pruning in the dormant season. Fruiting wood is thinned out to reduce the crop load. Health of fruiting wood is maintained throughout the tree by adequate light penetration. Thin branches back towards scaffolds to encourage new shoot growth close to scaffolds. Light summer pruning may be useful to provide light penetration in tree centers, maintaining health of fruiting wood throughout the tree.



Figure 7. Mature tree before (left) and after (right) dormant pruning. Fruiting wood is thinned out to adjust the crop load depending on variety. Branches are thinned back towards scaffolds to encourage new shoot growth close to scaffolds. Vigorous upright shoots are removed from the center but some weaker shoots are left to afford sunburn protection. Some annual summer pruning may be necessary to maintain light penetration in tree to keep interior fruit wood healthy.

Summer pruning is useful to remove some of the growth that would be removed in the following dormant season. Removing this growth is beneficial for increasing light penetration into the tree, thereby maintaining healthy fruiting wood. However, excessive summer pruning before harvest can invigorate the tree, delay maturity and reduce fruit color and size. Most importantly, prune in the summer only to increase light penetration but not result in vigorous regrowth. Vigorous regrowth after heavy summer pruning (June, July, August) has a low percentage of flower buds and can even create shading. Summer pruning should include thinning cuts made within the tree canopy which open areas to light penetra-

tion. Removing some but not all vigorous watersprouts within the tree's center keeps fruiting wood healthy but do not subject the tree to possible sunscald.

Ideally, maintain peach trees by a combination of pruning annually in both summer and dormant season. Limit pruning to thinning cuts and avoid severe bench cuts. As vigorous scaffolds become too upright, complete removal is often most practical. Maintain trees at the predesigned height and width. Beginning early in the life of the tree keep fruiting wood close to the scaffold limbs and healthy from the base of the end of scaffold limbs.

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